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PTO/SB/01 (6-95)

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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR PATENT APPLICATION

Docket Number (Optional)

H0001160

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if Plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled  
**ENVIRONMENTAL AND THERMAL BARRIER COATING FOR CERAMIC COMPONENTS**

Is attached hereto unless the following box is checked.

☐ was filed on \_\_\_\_\_ as United States Application Number or PCT International Application  
Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (If applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as Amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

☐

(Number)

(Country)

(Day/Month/Year Filed)

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

60/278,102

March 23, 2001

(Application Number)

(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International Application designating the United States, listed below and, insofar as the subject matter of each of the claims of this Application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number)

(Filing Date)

(Status — patented, pending, abandoned)

(Application Number)

(Filing Date)

(Status — patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Robert Desmond, Reg. No. 38,430, Larry Palguta, Reg. No. 29,575, Verne E. Kreger Jr., Reg. No. 35,231, Jeanne C. Suchodolski, Reg. No. 34,936, Roger H. Criss, Reg. No. 25,570 and William J. Zak, Jr., 38,668.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Inventor's signature Chien-Wei Li

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Second Inventor's signature Derek Raybould

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☐ Additional inventors are being named on separately numbered sheets attached hereto.

*Lynn Griffin*

LYNN GRIFFIN  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 8/30/2004

Sworn to and subscribed  
before me this  
15 day of Nov. 2001

SECOND PAGE OF DECLARATION FOR PATENT APPLICATION

Docket No. H0001160

Inventor's Signature:

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11/15/2001

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P.O. Address:

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Citizenship:

P.O. Address:

Inventor's Signature:

Date:

Name of Sixth Inventor:

Residence:

Citizenship:

P.O. Address:

Inventor's Signature:

Date:

Name of Seventh Inventor:

Residence:

Citizenship:

P.O. Address:

- 1/18 - (C) FILE CA  
STN CA Caesar accession number : 1464  
AN - 136:394062 CA  
TI - Reduction of leakage current of crystallized Ta<sub>2</sub>O<sub>5</sub> through substituti.  
with TiO<sub>2</sub>  
DT - Conference  
IN - Salam, K. M. A.; Konishi, H.; Fukuda, H.; Nomura, S.  
CS - Department of Electrical and Electronic Engineering, Muroran Institut  
Technology, Faculty of Engineering, Hokkaido, 050-8585, Japan  
SO - Extended Abstracts of International Workshop on Gate Insulator, 1st,  
Tokyo, Japan, Nov. 1-2, 2001 (2001), 192-195 Publisher: Business Cent  
for Academic Societies Japan, Tokyo, Japan.  
CODEN: 69CNQY; ISBN: 4-89114-021-6  
PY - 2001  
AB - The influence of the addn. of TiO<sub>2</sub> into Ta<sub>2</sub>O<sub>5</sub> thin fiims at  
various compn. formed by metalorg. decompn. (MOD) was studied. The  
effects of post-deposition rapid thermal annealing (RTA) temp. on the  
structural and elec. properties of Ta<sub>2</sub>O<sub>5</sub>-xTiO<sub>2</sub> thin films were  
also analyzed. B doped Czochralski grown, p-type (100) Si wafers wer  
used as substrate materials. The (1-x)Ta<sub>2</sub>O<sub>5</sub>-xTiO<sub>2</sub> thin films  
with a polycryst. structure were successfully prepd. by metalorg.deco  
crystallinity and insulating properties. A cryst.beta-Ta<sub>2</sub>O<sub>5</sub>  
phase was obtained and the surface morphol. of the films was  
smooth. It increases the grain size with increase in annealing temp.  
high dielec. const., low leakage current, low interface trap d., low l  
good thermal stability, high charge storage d., and good breakdown  
strength results of 0.92Ta<sub>2</sub>O<sub>5</sub>-0.08TiO<sub>2</sub> thin films are  
encouraging for the possibility of dielec. layer in fully  
integrated electronic devices.